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10/743,085	12/23/2003	Hisayoshi Nagae	247098US2SRD	8097
22850	7590	05/21/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			VO, HUYEN X	
			ART UNIT	PAPER NUMBER
			2626	
			NOTIFICATION DATE	DELIVERY MODE
			05/21/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/743,085

Applicant(s)

NAGAE ET AL.

Examiner

Huyen X. Vo

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3 sheets
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-11 and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Hoory et al. (US 6785649).

3. Regarding claims 1 and 17, Hoory et al. disclose a variable voice rate apparatus and method to control a reproduction rate of voice, comprising:

a voice data generation unit configured to generate voice data from the voice
(col. 5, lines 14-17, *microphone converting speech signal into electrical signal or voice data*);

a text data generation unit configured to generate text data indicating a content of the voice data (*steps 32 in figure 5, generating text based on input voice data*);

a division information generation unit configured to generate division information used for dividing the text data into a plurality of linguistic units each of which is characterized by a linguistic form (*figure 4, individual words are tagged and associated with voice data as indicated in figure 2, tagging word is considered dividing text into individual words*);

Art Unit: 2626

a reproduction information generation unit configured to generate reproduction information set for each of the linguistic units (*steps 34-63, each word is associated or tagged with these non-verbal characteristics*); and

a voice reproduction controller which controls reproduction of each of the linguistic units, based on the reproduction information and the division information (*figure 6, reproduce speech based on words and their associated non-verbal characteristics*).

4. Regarding claim 16, Hoory et al. disclose a variable voice rate apparatus to control a reproduction rate of voice, comprising:

a reproduction information generation unit configured to generate reproduction information (*steps 34-63, each word is associated or tagged with these non-verbal characteristics*), the reproduction information being set for each of a plurality of linguistic units into which voice data is divided, each of the linguistic units being characterized by a linguistic form (*figure 4, individual words are tagged and associated with voice data as indicated in figure 2, tagging word is considered dividing text into individual words*); and

a voice reproduction controller which controls reproduction of each of the linguistic units, based on the reproduction information and division information which is used for dividing the voice data into the linguistic units (*figure 6, reproduce speech based on words and their associated non-verbal characteristics*).

5. Regarding claim 2, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, further comprising a first storage which stores the reproduction information, wherein the voice reproduction controller acquires the reproduction information and controls reproduction of each of the linguistic units (*the system of Hoory et al. inherently includes memory buffer for temporary storing non-verbal characteristics indicated in steps 34-38 in figure 5*).

6. Regarding claim 3, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, further comprising a first storage which stores the reproduction information, and a second storage which stores the voice data and the division information (*the system of Hoory et al. inherently includes memory buffer for temporary storing voice data and text for further processing*), wherein the voice reproduction controller generates a voice signal corresponding to each of the linguistic units of the voice data stored in the second storage, based on the reproduction information and the division information (*figure 6, reproduce speech based on words and their associated non-verbal characteristics*).

7. Regarding claim 4, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, wherein the text data generation unit includes:

a speaker which outputs, to an operator, voice corresponding to the voice data (*synthesized speech would have to be played back to the end user in figure 6*); and

a text acceptance unit configured to accept input of text data corresponding to the voice in accordance with an operation of the operator (*step 32 in figure 5, text generated dependence upon input voice*).

8. Regarding claim 5, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, further comprising a reception unit configured to receive information related to reproduction speed of the text data, wherein the reproduction information generation unit generates, as the reproduction information, received information (*element 34 in figure 5 determine the word rate and sends this information to the system of figure 6 to synthesize speech according to this rate*).

9. Regarding claim 6, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, wherein:

the reproduction information generation unit generates, as the reproduction information, information corresponding to each of the linguistic units (*steps 34-63, reproduction information 34-38 is associated with each text word*); and

the voice reproduction controller determines a reproduction time of each of the linguistic units, based on the reproduction information and the division information, and controls reproduction of each of the linguistic units in the reproduction time (*figure 6, reproduce speech based on words and their associated non-verbal characteristics, and one of the non-verbal characteristics is the word rate or time*).

10. Regarding claim 7, Hoory et al. further disclose the variable voice rate apparatus according to claim 6, wherein:

the division information generation unit generates division information used for dividing the text data into a plurality of the linguistic units corresponding to a word class (*figure 4*);

the reproduction information generation unit generates, as the reproduction information, weighting information corresponding to each of the linguistic units (*steps 34-38 in figure 5*); and

the voice reproduction controller determines the reproduction time based on the weighting information and the division information, the voice reproduction controller controlling each of the linguistic units to reproduce each of the linguistic units in a determined reproduction time (*figure 6, reproduce speech based on words and their associated non-verbal characteristics*).

11. Regarding claim 8, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, wherein the reproduction information generation unit selects to-be-reproduced linguistic units from the linguistic units, based on the reproduction information and the division information, selected linguistic units being controlled independently to each other in reproduction (*element 67 in figure 5, produce expressive text based on non-verbal characteristics extracted from voice*).

12. Regarding claim 9, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, wherein:

the reproduction information generation unit generates a value of M (M is a positive integer) as the reproduction information (*steps 34-38 in figure 5, 3 reproduction parameters are extracted*); and

the voice reproduction controller selects to-be-reproduced every M-th linguistic unit from the linguistic units, based on the reproduction information and the division information, and controls selected linguistic units independently to each other in reproduction (*element 67 in figure 5, produce expressive text based on non-verbal characteristics extracted from voice*).

13. Regarding claim 10, Hoory et al. further disclose the variable voice rate apparatus according to claim 1, wherein:

the reproduction information generation unit generates a string of characters as the reproduction information (*element 67 in figure 5*); and

the voice reproduction controller selects, from the linguistic units, to-be-reproduced linguistic units each of which contains the string of characters, based on the reproduction information and the division information, and controls selected linguistic units independently to each other in reproduction (*figure 5, using the 3 non-verbal parameters to generate expressive text*).

Art Unit: 2626

14. Regarding claim 11, Hoory et al. further disclose the variable voice rate apparatus according to claim 10, wherein:

the reproduction information generation unit further generates a value of N (N is a positive integer) as the reproduction information (*steps 34-38, extract 3 non-verbal parameters*); and

the voice reproduction controller selects, from the linguistic units, to-be-reproduced linguistic units each of which contains N or more character strings indicating the reproduction information, selected linguistic units being controlled independently to each other in reproduction (*figure 5, using the 3 non-verbal parameters to generate expressive text*).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoory et al. (US 6785649) in view of Coorman et al. (US 6665641).

17. Regarding claim 12, Hoory et al. fail to specifically disclose the variable voice rate apparatus according to claim 1, wherein: the reproduction information generation

Art Unit: 2626

unit generates, as the reproduction information, first information indicating a string of characters, and second information indicating a level of priority and corresponding to the first information; and the voice reproduction controller selects, from the linguistic units by priority, linguistic units each of which contains a string of characters having a higher priority level than a priority level, based on the reproduction information and the division information, and controls selected linguistic units independently to each other in reproduction.

However, Coorman et al. teach that the reproduction information generation unit generates, as the reproduction information, first information indicating a string of characters, and second information indicating a level of priority and corresponding to the first information (*col. 9, lines 26-56, measure how well the units fit together*); and the voice reproduction controller selects, from the linguistic units by priority, linguistic units each of which contains a string of characters having a higher priority level than a priority level, based on the reproduction information and the division information, and controls selected linguistic units independently to each other in reproduction (*col. 9, lines 26-56, select the well-fitted units, referring to col. 11, line 41 to col. 12, line 67 for more detail*).

Since Hoory et al. and Coorman et al. are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hoory et al. by incorporating the teaching of Coorman et al. in order to improve speech synthesis quality.

18. Regarding claim 13, Hoory et al. fail to specifically disclose the variable voice rate apparatus according to claim 12, further comprising a detection unit configured to detect each time for reproducing each of the linguistic units, wherein the voice reproduction controller selects, from the linguistic units by priority, linguistic units each of which contains a string of characters having a higher level of priority than a priority level, based on the reproduction information and the division information, a total time for reproducing the linguistic units each of which contains the string of characters being not more than a preset time, and controls selected linguistic units independently to each other in reproduction.

However, Coorman et al. further teach a detection unit configured to detect each time for reproducing each of the linguistic units, wherein the voice reproduction controller selects, from the linguistic units by priority, linguistic units each of which contains a string of characters having a higher level of priority than a priority level, based on the reproduction information and the division information, a total time for reproducing the linguistic units each of which contains the string of characters being not more than a preset time, and controls selected linguistic units independently to each other in reproduction (*referring to col. 11, line 41 to col. 12, line 67*).

Since Hoory et al. and Coorman et al. are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hoory et al. by incorporating the teaching of Coorman et al. in order to improve speech synthesis quality.

19. Regarding claim 14, Hoory et al. fail to specifically disclose the variable voice rate apparatus according to claim 1, wherein: the reproduction information generation unit generates, as the reproduction information, information indicating a probability with which preset ones of the linguistic units are combined in a preset order; and the voice reproduction controller selects, from the linguistic units, combinations of linguistic units each having a probability lower than a preset value, selected combinations of linguistic units being controlled independently to each other in reproduction.

However, Coorman et al. further disclose the reproduction information generation unit generates, as the reproduction information, information indicating a probability with which preset ones of the linguistic units are combined in a preset order (*col. 11, line 41 to col. 12, line 67*); and the voice reproduction controller selects, from the linguistic units, combinations of linguistic units each having a probability lower than a preset value, selected combinations of linguistic units being controlled independently to each other in reproduction (*col. 11, line 41 to col. 12, line 67*).

Since Hoory et al. and Coorman et al. are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hoory et al. by incorporating the teaching of Coorman et al. in order to improve speech synthesis quality.

20. Regarding claim 15, Hoory et al. fail to specifically disclose the variable voice rate apparatus according to claim 14, further comprising a detection unit configured to detect a time for reproducing each of the units, wherein the voice reproduction controller

selects, from the linguistic units, combinations of linguistic units each having a probability lower than the preset value, based on the reproduction information and the division information, a total time for reproducing selected combinations of linguistic units being not more than a preset time, selected combinations of linguistic units being controlled independently to each other in reproduction.

However, Coorman et al. further disclose a detection unit configured to detect a time for reproducing each of the units, wherein the voice reproduction controller selects, from the linguistic units, combinations of linguistic units each having a probability lower than the preset value, based on the reproduction information and the division information, a total time for reproducing selected combinations of linguistic units being not more than a preset time, selected combinations of linguistic units being controlled independently to each other in reproduction (*col. 11, line 41 to col. 12, line 67*).

Since Hoory et al. and Coorman et al. are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Hoory et al. by incorporating the teaching of Coorman et al. in order to improve speech synthesis quality.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen X. Vo whose telephone number is 571-272-7631. The examiner can normally be reached on M-F, 9-5:30.

Art Unit: 2626

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HXV

5/12/2007